

REMARKS/ARGUMENTS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office Action, and amended as necessary to more clearly and particularly describe the subject matter which Applicant regards as the invention.

Claims 1–3 have been amended.

The Examiner rejected claims 1 and 3 under 35 U.S.C. 103(a) as being unpatentable over Silverbrook U.S. Pat. No. 6,802,594 in view of Otsuki U.S. Pat. App. Pub. No. 2003/0085937. Silverbrook does not teach all the limitations of claim 1, for which it is cited. More specifically, Silverbrook does not teach “a first temperature detection unit for detecting an ambient temperature of the printer as a first temperature when setting the correction reference value by the setting unit” and “a second temperature detection unit for detecting an ambient temperature of the printer as a second temperature when performing the printing by the printer.” Referring to column 1, line 66 through column 2, line 7 of Silverbrook, Silverbrook discloses a system for purposely misaligning the printhead modules during production of the printer to account for thermal expansion during operation of the printer. Silverbrook achieves this by purposely misaligning the printhead modules on a support beam by a required amount during the manufacturing process under ambient temperature conditions. During operation of the printer, as the printer reaches its operating temperature, the temperature of both the printhead modules and the support beam will increase. Thus, the printhead modules and the support beam will begin to expand at different rates based on their coefficients of thermal expansion. As the printhead modules and the support beam begin to expand, the printhead modules will automatically properly align, see column 3, lines 3–11. Silverbrook calculates the amount of

misalignment using 1) the difference between the coefficients of thermal expansion of the printhead modules and the support beam, 2) the length of each printhead module, and 3) the difference between the ambient or production temperature at the time of production and the operating temperature of the printer during operation, see column 3, lines 12–16. The Examiner, citing column 2, lines 25–33, contends that the third requirement represents a temperature detection unit. Applicant respectfully disagrees. Referring to column 3, lines 16–30 of Silverbrook, Silverbrook explains that the typical operating-environment-temperature (ambient-temperature) range for a printer is between 0°C to 40°C. Silverbrook further discloses that the typical operating temperature range for a printhead is between 50° C to 90°C. To ensure that the alignment of the printhead is within acceptable limits of the operating-environment-temperature (ambient-temperature) range Silverbrook concludes that the production temperature should be 20°C but does not actually measure this temperature. Silverbrook uses this temperature information to allow for thermal expansion of the printhead during operation of the printer. In other words, as long as the environmental temperature is between 0° C to 40°C and the operating temperature of the printhead is between 50° C to 90°C, then misaligning the printhead modules during production at a production temperature of 20°C will account for thermal expansion between the printhead modules and the support beam and will, thus, properly align the printhead modules during operation. The temperature of the printer or the temperature of the printhead modules is not measured during operation of the printer. Silverbrook, thus, does not disclose a first or second temperature detection unit. Therefore, Silverbrook does not teach all the limitations, for which it is cited, of claim 1.

Silverbrook does not teach all the limitations of claims 1 and 3, for which it is cited. More specifically, regarding claim 1, Silverbrook does not teach “a calculation unit for

calculating a misalignment correction value by revising the correction reference value read out from the correction reference value storage unit on the basis of a result of comparison between the first temperature read out from the first temperature storage unit and the second temperature detected by the second temperature detection unit” and regarding claim 3, Silverbrook does not teach “calculating a misalignment correction value by revising the correction reference value on the basis of a result of comparison between the first temperature and an ambient temperature of the printer at the time of printing as a second temperature to thereby correct misalignment on the basis of the calculated misalignment correction value.” As explained above, Silverbrook teaches a system for purposely misaligning printhead modules at the time of production of the printer so that during operation of the printer the printhead modules properly align due to known coefficients of thermal expansion between the printhead modules and the support beam. Silverbrook does not calculate a temperature during operation of the printer. Thus, Silverbrook does not teach a calculation unit as recited in claim 1 nor does it teach calculating a misalignment correction value as recited in claim 3. Therefore, Silverbrook does not teach all the limitations of claims 1 and 3, for which it is cited.

The Examiner rejected claim 2 under 35 U.S.C. 103(a) as being unpatentable over Silverbrook U.S. Pat. No. 6,802,594 as modified by Otsuki U.S. Pat. App. Pub. No. 2003/0085937 in view of Silverbrook et al., U.S. Pat. No. 6,464,332. Claim 2 depends from claim 1, thus, all arguments pertaining to claim 1 are equally applicable to claim 2 and are herein incorporated by reference.

The combination of Silverbrook as modified by Otsuki does not teach all the limitations of claim 2. More specifically, the combination does not teach “a temperature subrange larger in the amount of misalignment is narrower than a temperature subrange smaller in the amount of

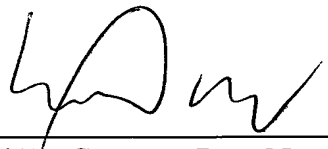
misalignment.” Referring to column 2, lines 7–11 of Silverbrook, Silverbrook simply discloses that the alignment of the printhead modules will change as the temperature of the support beam changes. Silverbrook does not disclose that the misalignment will be larger at a given temperature than it will be at a different temperature. Therefore, the combination of Silverbrook as modified by Otsuki does not teach all the limitations of claim 2.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. 36625.

Respectfully submitted,

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